



HONOURS & MINORS IN ELECTRONICS COMMUNICATION AND INSTRUMENTATION ENGINEERING (HECI)

HONOURS CURRICULUM

EQUIVALENT MOOCs – EVEN SEMESTER, DEC-APRIL 2025, AY 2024-25

S. No	Course Code	Course Name	EQUIVALENT COURSES OFFERED BY								
			SWAYAM-NPTEL			COURSERA / UDEMY			SPOKEN TUTORIAL - IITB		
			Course Name	C	Course Dates*	Course Name	C	Course Dates*	Course Name	C	Course Dates*
1	U18HCI1001	Advanced Sensors and Actuators	Sensors and Actuators		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
2	U18HCI1002	Mathematical Foundation for Machine Learning	Introduction to Machine Learning		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
3	U18HCI1003	Advanced IoT and its Applications	Introduction To Industry 4.0 And Industrial Internet Of Things		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
4	U18HCI1004	Artificial Intelligence Applications	Artificial Intelligence: Knowledge Representation And Reasoning		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
5	U18HCI1005	Amp Applications: Design and Implementation	Integrated Circuits, Mosfets, OP-Amps and their Applications		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
6	U18HCI1006	Advanced communication systems	Principles of Communication Systems - I		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 11 Apr 2025			LDR:			LDR:
7	U18HCI1007	Data Science for Engineers	Data Science for Engineers		CCD: 20 Jan 2025	--	-	CCD:	--	-	CCD:
					LDR: 14 Mar 2025			LDR:			LDR:

8	U18HCI1008	Biomedical signal and Image processing	Biomedical Signal Processing	CCD:	--	--	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
9	U18HCI1009	Advanced Digital Signal Processing	Digital Signal Processing and its Applications	CCD:	-	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
10	U18HCI1010	Photonics and Applications	Biophotonics	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
11	U18HCI1011	Microelectronics	Microfoundations of Macroeconomics	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
12	U18HCI1012	Digital VLSI Testing	Digital VLSI Testing	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
13	U18HCI1013	Software Defined Radio	Digital Communication using GNU Radio	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
14	U18HCI1014	mmWave communication	--	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
15	U18HCI1015	Deep Learning for Computer Vision	Deep Learning For Visual Computing	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
				11 Apr 2025						

I. In exigency situations such as the student already completed the listed compulsory courses(s) on his/her own interest during previous semesters through valid MOOCs etc, the HoD in consultation with Dean-AA shall offer an alternative course(s) for the specific scenario, after verification of relevant documents.

II. By the end of April of every academic year, the department in consultation with Dean-AA, shall

- notify the list of equivalent courses in SWAYAM-NPTEL MOOCs / other standard MOOCs against the list of courses notified under Honours curriculum
- propose a new course(s) in the place of any listed course(s) in the Honours curriculum, in case no equivalent course is found in MOOCs

*C: Credits ; CCD: Course Commencement Date; LDR: Last Date of Registration

		Laboratory Courses (any 2 courses) - TO BE TAKEN IN THE PARENT DEPARTMENT			
-	Honours Laboratory Courses	U18HCI1016	Sensors and Applications Laboratory		2 credits
16		U18HCI1017	Advanced Communications Laboratory		
17		U18HCI1018	Advanced Signal Processing and Applications Laboratory		
18		U18HCI1019	Advanced VLSI Design Laboratory		
19					
Total Credits to be earned					18+2=20

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			SWAYAM-NPTEL			COURSERA / UDEMY			SPOKEN TUTORIAL - IITB		
			Course Name	C	Course Dates*	Course Name	C	Course Dates*	Course Name	C	Course Dates*
MINOR ELECTIVE COURSES (any 6 to 9 courses to earn 18 credits)											
1	U18MCI1001	Analog Electronic Circuits	Analog Electronic Circuits - IITM		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
2	U18MCI1002	Signals and Systems	Signals and Systems		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
3	U18MCI1003	Electrical Measurement and Electronic Instruments	-		CCD: LDR:	--	-	CCD: LDR:	--	-	CCD: LDR:
4	U18MCI1004	Digital Circuits	Digital Electronic Circuits		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
5	U18MCI1005	Sensors & Actuators	Sensors and Actuators		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
6	U18MCI1006	Communication Engineering	Principles of Communication Systems - I		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
7	U18MCI1007	Integrated Circuits	Integrated Circuits, Mosfets, OP-Amps and their Applications		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
8	U18MCI1008	Digital Signal Processing	Digital Signal Processing and its Applications		CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
9	U18MCI1009	Microprocessors and Interfacing	Microprocessors and Interfacing		CCD: 20 Jan 2025 LDR: 11 Apr 2025	-	-	CCD: LDR:	--	-	CCD: LDR:

10	U18MCI1010	Industrial Internet of Thing	Introduction To Industry 4.0 And Industrial Internet Of Things	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
11	U18MCI1011	Introduction to Embedded System Design	Introduction to Embedded System Design	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
12	U18MCI1012	Mathematical Foundation for Machine Learning	Introduction to Machine Learning	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
13	U18MCI1013	Artificial Intelligence and Applications	Artificial Intelligence: Knowledge Representation And Reasoning	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
14	U18MCI1014	Wireless and Cellular Communications	Fundamentals of MIMO Wireless Communication	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
15	U18MCI1015	Fiber Optic Communications	Optical Wireless Communications for Beyond 5G Networks and IoT	CCD:	--	-	CCD:	--	-	CCD:
				20 Jan 2025			LDR:			LDR:
16	U18MCI1016	Digital Image Processing	Image Processing Using Python	CCD:	--	-	CCD:	--	--	CCD:
				01 Jan 2025			LDR:			LDR:
17	U18MCI1017	VLSI Design	Digital VLSI Testing	CCD:	--	-	CCD:	--	--	CCD:
				20 Jan 2025			LDR:			LDR:
18	U18MCI1018	Biomedical Instrumentation	Medical Image Analysis	CCD:	--	-	CCD:	--	--	CCD:
				20 Jan 2025			LDR:			LDR:
				14 Feb 2025						

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- II. By the end of April of every academic year, the department in consultation with Dean- AA, shall
1. notify the list of equivalent courses in SWAYAM-NPTEL MOOCs /other standard MOOCs against the courses listed under Minor curriculum
 2. propose a new course(s) in the place of any course(s) listed under Minor curriculum, in case no equivalent course is found in MOOCs

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		Laboratory Courses (any 2 courses) – TO BE TAKEN IN THE PARENT DEPARTMENT		
-	Minor Laboratory Courses			
16		U18MCI1019	Analog and Digital Circuits Laboratory	2 credits
17		U18MCI1020	Measurements and Sensors Laboratory	
18		U18MCI1021	Microprocessors and Embedded systems Laboratory	
19		U18MCI1022	Communications and Signal Processing Laboratory	
			<i>Total Credits to be earned</i>	18+2=20

S. No	Course Code	Course Name	EQUIVALENT COURSES OFFERED BY											
			Self Learning Mode COURSES (any 6 to 9 courses to earn 18 credits)			SWAYAM-NPTEL			COURSERA / UDEMY			SPOKEN TUTORIAL - IITB		
			Course Name	C	Course Dates*	Course Name	C	Course Dates*	Course Name	C	Course Dates*			
1	U18CI80A	IoT Industrial Applications	Introduction To Internet Of Things	CCD:	--	-	CCD:	--	-	CCD:				
				20 Jan 2025			LDR:			11 Apr 2025	LDR:			
2	U18CI80C	Cyber Security	Foundations of Cyber Physical Systems	CCD:	--	-	CCD:	--	-	CCD:				
				20 Jan 2025			LDR:			11 Apr 2025	LDR:			
3	U18CI80B	Satellite communications	-	CCD:	--	-	CCD:	--	-	CCD:				
							LDR:				LDR:			
4	U18CI802A	Cloud Computing	Cloud Computing	CCD:	--	-	CCD:	--	-	CCD:				
				20 Jan 2025			LDR:			11 Apr 2025	LDR:			
5	U18CI802C	Robotics	Advanced Robotics	CCD:	--	-	CCD:	--	-	CCD:				
				20 Jan 2025			LDR:			11 Apr 2025	LDR:			
6	U18CI802B	Mobile and Wireless Networks	-	CCD:	--	-	CCD:	--	-	CCD:				
							LDR:				LDR:			

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			SWAYAM-NPTEL			COURSERA / UDEMY			SPOKEN TUTORIAL - IITB		
			Course Name	C	Course Dates*	Course Name	C	Course Dates*	Course Name	C	Course Dates*
Acceleration Programme COURSES (any 6 to 9 courses to earn 18 credits)											
1	U18CI801A: U18CI801B:	IoT Industrial Applications	Introduction To Internet Of Things	-	CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
2	U18CI801C: U	FPGA Design	-	-	CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
3	U18CI801B:	Low Power VLSI Design	-	-	CCD: LDR:	--	-	CCD: LDR:	--	-	CCD: LDR:
4	U18CI802A:	Cloud Computing	Cloud Computing	-	CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
5	U18CI802C: U	Robotics	Advanced Robotics	-	CCD: 20 Jan 2025 LDR: 11 Apr 2025	--	-	CCD: LDR:	--	-	CCD: LDR:
6	U18CI802B:	Mobile and Wireless Networks	-	-	CCD: LDR:	--	-	CCD: LDR:	--	-	CCD: LDR:

Sd/-

Smt. R. Nirmala Devi MOOCs
Coordinator

Date: 20.12.2024

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Prof. K. Sivani
Head of the Department, ECIE

Dean, Academic Affairs

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